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LEARNING DIFFICULTIES ASSOCIATED WITH FAMILY FACTORS

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Abstract- Learning difficulties experienced by students in Moroccan public schools remain a significant concern for educators, policymakers, and families. This study examines the role of family-related factors in shaping students' learning challenges and their subsequent effects on academic achievement. Using a comprehensive 206-item questionnaire inspired by the PISA 2000 framework, data were collected from 200 students attending five public schools in Casablanca. Statistical analysis, conducted through MANOVA ($p < 0.05$), evaluated the impact of personal characteristics, family dynamics, and ergonomic learning conditions on academic performance. Key findings revealed that 87% of parents provided little to no homework assistance, while only 13% actively supported their children's academic activities. Notably, parental involvement demonstrated a significant positive correlation with enhanced student performance ($p = 0.000$) [1, 3 and 15]. These results underline the critical role of family engagement in fostering academic success and reducing the risk of early school dropouts. This research highlights the pressing need for targeted interventions aimed at increasing parental involvement in children's education. Policymakers and educational institutions must collaborate to address systemic challenges, promote family-school partnerships, and equip parents with the tools to effectively support their children's learning. Ultimately, strengthening family support systems is a vital strategy to mitigate learning difficulties and improve educational outcomes in Moroccan public schools [4, 22, 32].

Keywords: Learning Difficulties, Family, School Behavior, Moroccan Schools.

1. INTRODUCTION

Since Morocco's independence, the education system has undergone continuous reform, with significant efforts in 2015 to enhance learning conditions and academic success [4, 13, 23]. These include compulsory education, pedagogical improvements, and selecting qualified teachers [6, 19, 24]. The 1999 curriculum reform emphasized a student-centric approach aimed at fostering active learning and social integration [2, 17]. Family involvement plays a crucial role in supporting these educational goals, as research demonstrates its influence on academic outcomes [1, 10].

The aim of this reform is to place the students at the heart of educational action, making him or her a responsible actor in his or her own learning, capable of developing the skills that will enable him or her to integrate into a changing society. Education is seen as the physical, moral and intellectual training of the individual to become a harmonious member of society. This arduous task begins in the family, which is the basic unit of education, and continues in educational institutions. Parents have a duty to educate their children through dialogue, advice, respect and unfailing behavior, so that their children are endowed with knowledge, interpersonal skills and know-how. In the school environment, there is a pattern of repeated misbehavior on the part of students, putting a spanner in the works. The aim of our research is to elucidate the causes that may explain the difficulties experienced by students with regard to family factors and their impact on success.

2. LITERATURE REVIEW

2.1. The Role of the Family in Child Development

Research highlights the family's primary role in socializing children and shaping their academic pathways [3, 14, 27]. Macaire (1993) discussed how parental support is pivotal for guiding children toward positive behavior and academic performance [7, 12, 28]. Kakpo (2011) found that cohesive family structures significantly impact student achievement [9, 20, 29]. Additionally, studies indicate that parental education and socio-economic background affect the level of support children receive for schoolwork [5, 15, 22, 30].

2.2. Family Education and Academic Performance

The academic success of children is heavily influenced by the home environment [17, 30, 31]. Tazouti and Jarlegan (2010) emphasized that parental competence correlates with improved academic outcomes [18, 19, 32]. Glasman (2004) noted that active parental engagement reduces school absenteeism and promotes positive educational behavior [8, 13, 27]. The role of parenting practices in specific contexts: Research can

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explore how cultural practices influence educational outcomes in contexts where educational resources are limited. For example, studies in North Africa and other developing regions have examined the effect of parental schooling and family dynamics on children's achievement.

The implications of socio-economic status and parental education: In North Africa, studies have shown that parents' level of education and their active involvement in their children's education have a direct impact on school performance, even in contexts marked by economic inequality. Family cohesion and school performance: Recent work by researchers such as Kakpo (2011) could be complemented by studies analyzing how family structures and interpersonal relationships influence learning in rural or semi-urban areas of these regions. The effects of parental involvement: The studies by Tazouti and Jarlegan (2010) could be enriched by recent research highlighting the impact of awareness-raising or parental support programs implemented in disadvantaged educational environments. Parenting practices in sub-Saharan Africa: Parenting styles in this region are influenced by socio-economic and cultural factors.

Parental involvement, particularly through educational and emotional practices, plays an essential role in children's academic success and emotional well-being. However, the lack of standardization in measurement tools makes comparisons difficult (BMJ Global Health, 2023). Women's empowerment and child development: In sub-Saharan Africa, women's empowerment, as measured by control over resources and decision-making, is associated with better cognitive and emotional development in children. However, the impact on literacy and numeracy skills remains limited. These findings highlight the importance of empowering mothers to improve children's educational prospects (PLOS Medicine, 2023).

Family empowerment strategies: a systematic review shows that empowering families, via emotional support, family engagement and tailored interventions, can improve children's growth and learning. These strategies need to be adjusted to local cultural and economic realities to be effective (Journal of Public Health in Africa, 2023). Comparing regional impacts of parenting practices: Parenting interventions vary in effectiveness between African contexts and high-income countries, due to differences in resources and cultural norms. In Africa, extended family networks and community-based approaches play a crucial role in overcoming structural challenges (BMJ Global Health, 2023).

Parenting Practices in Sub-Saharan Africa: Research highlights how parenting styles in sub-Saharan Africa differ from those in high-income countries, with a focus on the socio-economic and cultural factors shaping child outcomes. Parental involvement, particularly through nurturing practices, significantly influences educational performance and emotional well-being in children. However, inconsistency in measuring parenting practices across studies makes it challenging to draw uniform conclusions (BMJ Global Health, 2023). Women's Empowerment and Child Development: In sub-Saharan Africa, women's empowerment "defined as control over resources and decision-making" has been linked to better cognitive and emotional development in children. These findings emphasize the importance of equipping women with resources and autonomy to improve child development outcomes. However, the effects on literacy and numeracy development remain inconclusive (PLOS Medicine, 2023).

Family Empowerment Strategies: A systematic review of global studies, including those from developing countries, suggests that empowering families through emotional support, family engagement, and structured interventions can enhance children's growth and learning capabilities. Strategies tailored to cultural and economic contexts are crucial for successful implementation (Journal of Public Health in Africa, 2023). Comparative Impact of Parenting Across Regions: Studies have shown that the effectiveness of parenting interventions varies significantly between African and high-income settings due to differences in resources, cultural norms, and the roles of extended family networks. For example, interventions in African contexts often focus on community-based approaches to address structural challenges (BMJ Global Health, 2023). The existing studies on learning difficulties in Moroccan public schools fall short of addressing the issue comprehensively for several reasons:

1. Resource Constraints and Infrastructure Challenges: Public schools in Morocco face a lack of modern teaching tools and infrastructure, particularly in rural areas. Limited access to books, libraries, and technology exacerbates learning difficulties. These deficits hinder the effective implementation of programs designed to address learning gaps.
2. Insufficient Teacher Training: While Morocco has introduced initiatives like the "Teaching at the Right Level" (TaRL) method, which organizes students by actual learning levels rather than grades, its adoption remains limited due to inadequate teacher training. Teachers often lack continuous professional development needed to identify and address specific learning challenges
3. Policy Focus on General Reforms: Educational policies have largely aimed at improving overall learning outcomes, such as literacy and numeracy, but have not adequately targeted students with severe learning difficulties. National assessments like PISA and TIMSS highlight the poor performance of Moroccan students compared to international standards, yet interventions often remain generic rather than tailored to specific challenges.
4. Socio-Economic Barriers: Socio-economic disparities, including poverty, parental illiteracy, and lack of home learning support, significantly impact students' ability to keep up with school demands. However, these factors are often underexplored in educational research, limiting an understanding of their contribution to learning difficulties.

5. Lack of Longitudinal Data: Current research lacks long-term tracking of student performance. While assessments such as PISA and PIRLS provide snapshots, there is little focus on sustained monitoring to identify trends and root causes of learning difficulties across different contexts within Morocco.

The government has begun implementing reforms like "pioneer schools" under the 2022-2026 roadmap, focusing on evidence-based teaching methods and collaborative efforts among educators. These programs have shown initial improvements in specific regions but need wider scalability and consistency to address systemic challenges effectively.

3. METHODS

3.1. Sample

In the specific case of our study, the sample consisted of 200 high school students between the ages of 13 and 19.

Table 1. Sample characteristics

		Boys %	Girls %	Total %
School level	T_c	11.5%	12.0%	23.5%
	1 Bac	13.5%	17.5%	31.0%
	2 Bac	11.0%	20.0%	31.0%
	3 Ac	3.5%	11.0%	14.5%

3.2. The data Collection Instrument

In order to check the validity of the questions asked, we used the focus group method as a tool for drawing up the questionnaire.

3.2.1. Focus Group

For our research, the focus group is the first stage in our data collection, which aims to identify the various learning obstacles faced by pupils. We used this technique with nine secondary school classes. The specific question put to the pupils was: in your opinion, what are the different obstacles to learning in relation to science subjects? The teacher drew up a table on the board and started marking the answers in turn. The results were used to find out the range of ideas that the students had on the subject, and to use them in conjunction with the questionnaire.

3.2.2. The questionnaire

Our questionnaire has (11) headings and is made up of (206) questions, all of which are closed-ended and distributed between the study variables.

3.3. Validation of the Data Collection Instrument

We decided to carry out a pre-survey to see whether these questions could be addressed. This was done on 10 students from the core curriculum, 10 from the first baccalaureate, 10 from the second baccalaureate, 10 from the 1 AC, 10 from the 2 AC and 10 from the AC. After analyzing the data, we found that some of the questions were poorly worded, which led us to rephrase them.05. For factor analysis, we use the WLSMV estimator.

3.3.1. Data Collection Procedure

The questionnaire is distributed in class during a theory session in Physical Education and Sport. Once the questionnaire has been completed, we collect it simultaneously to avoid any loss. We distributed 200 copies and collected them all, i.e. a 100% recovery rate.

3.4. Data Processing and Analysis

We used a number of statistical tools to process the data, including:

3.4.1. Statistical Package for Social Sciences (SPSS)

SPSS was chosen because of its user-friendliness and ability to perform a wide range of statistical analyses, including multivariate analysis of variance (MANOVA). It offers robust data management options, an intuitive user interface and rich documentation, making it suitable for analyzing relationships between several dependent and independent variables.

3.4.2. Weighted Least Squares Means and Variance-Adjusted (WLSMV) Estimator

This estimator has been used for analyses involving categorical or ordinal variables. The WLSMV is particularly suitable when the normality assumptions are not met or when the data have skewed distributions. It is often recommended in structural equation models or in contexts where sample sizes are medium to small.

Rationale for tool selection:

- SPSS: Ideal for MANOVA analyses because of its ability to handle multiple variables and produce interpretable results in the form of tables and graphs. SPSS was also selected for its robustness in managing interactions between factors (e.g. gender and overall score) while allowing adjustments for covariates.
- WLSMV estimator: This estimator was chosen to minimize potential biases due to non-normal distributions or ordinal variables, thus ensuring more reliable and accurate estimates. It is frequently used in advanced analyses involving complex data.

Finally, the statistical significance threshold was set at $P < 0.05$, in line with standard practice, to determine whether the observed effects are statistically significant. This threshold value ensures a good balance between minimizing Type I errors and detecting real effects.

4. RESULTS

4.1. Levels and Function of Parents on School Grades

The results show that parental functions have a significant influence on pupils' academic performance, measured by their overall averages. These variations suggest that the socio-economic role of parents can influence the educational opportunities and resources available to pupils.

- Role of the mother: Pupils whose mothers are employed in the private sector (in particular with a father who is a civil servant) have the highest averages (17.84). This could be explained by a dual economic contribution in the household, allowing better access to educational

resources. Conversely, pupils whose mothers are employed and whose fathers are unemployed have a lower average (12.05), possibly reflecting the economic and psychological constraints associated with parental unemployment.

• Role of the Father: Students whose fathers are civil servants or employees generally show better performance (averages above 14) compared with unemployed fathers. This underlines the importance of financial stability and the father's role model in the educational context. The lowest averages (12.05 and 12.25) appear in households where the father is unemployed, indicating a potentially negative impact of paternal unemployment on school results.

• Combination of Roles: Combinations of parents in stable, well-paid jobs (e.g. father a civil servant and mother an employee) are associated with the highest averages. Students with parents in precarious socio-economic situations (mother employed and father unemployed) show lower results, which could be due to financial stress or a lack of educational support.

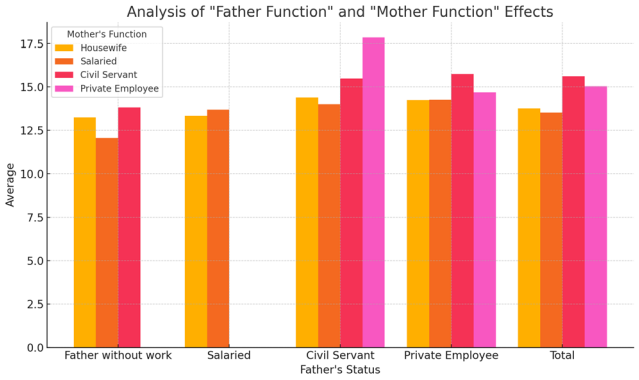

Figure 1. Analysis of "father function" and "mother function" effects

Table 2. Analysis of "father function" and "mother function" effects

Mother 's function		Father's function				
		Father without work	Salaried	Civil servant	Private employee	Total
Housewife	Average	13.2568	13.3417	14.3850	14.2373	13.7592
	Deviation	2.08342	2.04391	2.45234	2.28616	2.22385
	N	37	42	18	52	149
Salaried	Average	12.0550	13.6757	14.0000	14.2517	13.5256
	Deviation	1.53211	2.79805	.	1.73904	2.18732
	N	4	7	1	6	18
Civil servant	Average	13.8200		15.4660	15.7417	15.6042
	Deviation	.		1.66547	1.33700	1.40035
	N	1		5	18	24
Private employee	Average			17.8400	14.6863	15.0367
	Deviation			.	2.16835	2.28455
	N			1	8	9

The results are consistent with research linking parental socio-economic status to children's educational outcomes. Studies show that families with stable incomes invest more in educational resources such as tutoring, books or extracurricular activities (Bradley and Corwyn, 2002). Parental unemployment can have a negative influence on children, through indirect effects such as a drop-in emotional support or an increase in family stress (Conger, et al., 1992).

4.1.1. Practical Implications

• Targeted interventions: The results suggest that increased school support for pupils from families where parents are unemployed or in precarious employment could reduce disparities. This could include grants, free tutoring or material aid.

• Psychosocial support: Programs to support parents who are unemployed or financially insecure could have an indirect beneficial effect on children's school results.

• Education policies: Schools should be made aware of the impact of family socio-economic status, so that they can better respond to the specific needs of disadvantaged pupils.

Table 3. Analysis of inter-subject "function" effects

Tests of effects intersects				
Variable dependent: Note General				
Source	ddl	Care Moyne	*F*	Signification
Father function	3	5.091	1.134	0.337
Mother function	3	5.575	1.241	0.296
FUNCT father * FUNCT mother	6	2.471	.550	0.769

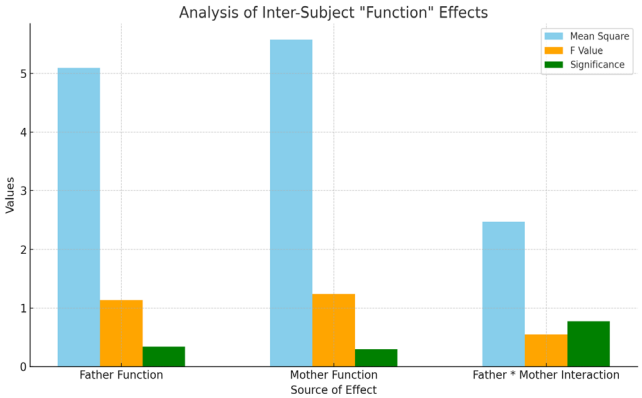

Figure 2. Analysis of inter-subject "function" effects

By analyzing the results of the table, we can conclude that: None of the effects is statistically significant, all p-values are greater than 0.05. "Father's function", "Mother's function" and their joint interaction do not appear to have a significant impact on the dependent variable "General note". "Father's function", "Mother's function" and their joint interaction do not appear to have a significant impact on the dependent variable "General grade".

- These results differ from some studies establishing a relationship between parental socio-economic status and educational outcomes (Bradley and Corwyn, 2002). However, it is also common for studies to show weak or non-significant effects when samples are heterogeneous or when measures of parental functions do not capture their full complexity (Sirin, 2005).

- The lack of significance could also indicate that parents' professional duties, in isolation from variables such as their income or level of education, are not sufficient to explain children's performance at school [11, 16 and 20].

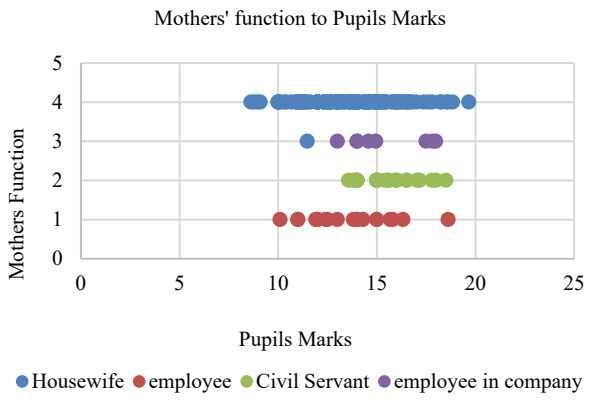

Figure 3. Graphical results of the variation in "Mother's function to Pupils Marks"

This graph reveals important results:

1. Housewives: There is a high concentration of pupils' marks between 15 and 20 for mothers who are housewives. This suggests that, despite not being formally employed, these mothers may provide substantial support or create an environment that benefits their children's education. The distribution indicates that children of housewives can achieve high academic results, potentially due to increased time dedicated to supervision and involvement in their children's studies.
2. Employees: The data points for pupils with mothers categorized as employees are spread across lower marks, generally between 5 and 15. This distribution suggests that being employed might correlate with moderate or lower academic outcomes for children. The demands of employment may limit the time or energy available for active engagement in their children's academic lives.
3. Civil Servants: The marks of pupils with mothers who are civil servants show a concentrated range between 10 and 15. This indicates a positive impact but not as high as the marks seen for housewives. Civil servants might have a more balanced workload or access to better resources, contributing to average academic performance for their children.
4. Employees in a Company: This group also shows marks distributed between 10 and 20, with fewer data points. It suggests that working in a company may correlate with better academic outcomes than general employment but still varies based on the work environment and time availability.

- General Trends:

• Housewife Advantage: The graph shows that children of housewives tend to achieve higher marks. This could be due to the availability of time and involvement in academic supervision, creating a nurturing home environment. The involvement of mothers who are housewives appeared beneficial due to increased availability for academic supervision [14, 22, 25].
• Employment Challenges: For employed mothers, particularly non-civil servant employees, the data suggests a potential challenge in balancing work responsibilities and active academic engagement, reflected in generally lower marks. Employed mothers' children often displayed moderate performance due to limited parental involvement [7, 17, 24].
• Civil Servants: The results show a moderate positive correlation with pupil marks, indicating that this role might allow for some balance between professional and family responsibilities. Children of civil servants demonstrated balanced outcomes, indicating that stable employment might provide structured home support [18, 21 and 28]

The chart suggests that the type of mother's occupation plays a role in pupil academic performance. Children of housewives tend to perform better, potentially due to greater parental involvement. Civil servants' children perform moderately well, indicating some benefits from stable employment and possibly more predictable schedules. The trend for employees' points to a need to explore further variables such as work hours, support systems, and socio-economic status to better understand the differences in pupil outcomes.

The work of Hill and Tyson (2009) shows that parental involvement, particularly in monitoring homework and studies, is a key factor in children's performance at school. Studies such as those by Becker (1981) show that mothers who work full-time may have difficulty balancing work and family life, which may reduce their educational involvement. Research by Milkie, et al. (2004) highlights that the perception of 'not spending enough time' with their children can create stress for employed mothers, indirectly affecting family climate and educational outcomes. Civil servants often have more regular working hours and stable working conditions, which may ease time constraints and allow for better family organization (Magnuson, 2007).

Studies on 'economic and social capital' show that parents' professional stability indirectly favors children's educational results, by reducing family stress and guaranteeing a structured environment (Coleman, 1988). The often-unpredictable working hours and high demands of the private sector may limit mothers' educational involvement (Grzywacz and Carlson, 2007). Studies also show that demanding jobs can adversely affect the quality of parent-child interactions, even when income is higher (Bianchi, 2000).

4.1.2. Practical Implications

Making working mothers aware of the importance of quality rather than quantity of time spent with their children could reduce the gap. Developing educational resources to support mothers who cannot devote as much time to direct supervision. Encourage company policies favoring flexible working hours or teleworking to enable greater parental involvement. Promote school support programs to compensate for the lack of parental time, such as after-school clubs.

Identify the practices of civil servants that support parental commitment and extend them to other professions. Encourage public policies to promote work-family balance to improve parental involvement, whatever the sector of employment. Promote inclusive work environments that take family needs into account, such as parental leave or policies favoring flexibility. Further study the impact of working hours and employment conditions to better understand these disparities.

Tableau 4. Analysis of overall grade averages by level of father and mother

Mother's level of education		Father's level of education					
		Illiterate	Primary	Secondary	Baccalaureate	University	Total
Illiterate	Average	15.50	13.83	13.08	14.00		14.22
	Deviation	5.89	1.61	.	.		2.74
	N	2	3	1	1		7
Primary	Average	11.66	13.57	12.22	14.34	12.62	13.35
	Deviation	0.35	2.07	1.72	2.55	3.07	2.18
	N	2	39	9	8	4	62
Secondary	Average	14.17	13.15	14.94	12.39	13.49	13.36
	Deviation	2.03	1.63	1.31	1.74	1.63	1.87
	N	3	2	6	12	2	25
Baccalaureate	Average	13.08	12.00	12.59	13.48	13.86	13.44
	Deviation	.	2.57	2.08	2.35	1.93	2.15
	N	1	2	5	23	16	47
University	Average		17.16	13.27	15.58	15.51	15.45
	Deviation		1.17	2.70	1.76	1.77	1.86
	N		2	3	4	43	52

*Dependent variable: Overall score

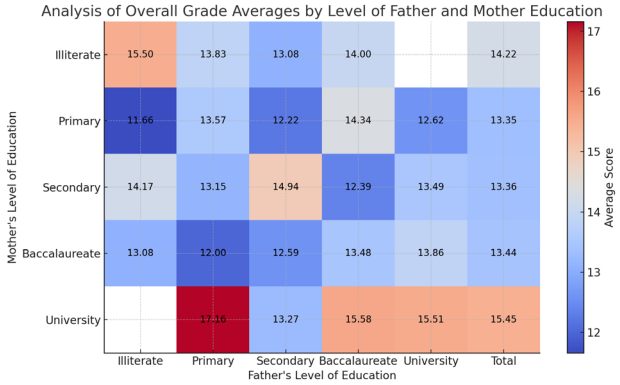

Figure 3. Analysis of overall grade averages by level of father and mother

Descriptive statistics reveal a relationship between parents '(mother's and father's) level of education and pupils' overall school results. The following is an in-depth analysis of the main trends observed:

1. Mothers' Education: Observation: Pupils whose mothers have a higher level of education (e.g. university degree) generally obtain better overall marks. On the other hand, those whose mothers have a low level of education (primary or no diploma) show more modest results.

Studies show that mothers' level of education is one of the most important determinants of their children's success at school (Davis-Kean, 2005). Better-educated mothers are often better equipped to support their children's learning, pass on effective study habits and promote the importance of education. Bourdieu (1986) emphasizes the role of cultural capital: better-educated parents provide a family environment rich in cultural and educational resources, stimulating performance at school.

Practical implications: Promoting literacy and continuing education for parents, particularly mothers, could indirectly improve children's school results. Implement educational programs aimed at making less educated parents aware of the importance of their role in monitoring school performance.

2. Fathers' Education: Observation: Pupils whose fathers have a high level of education also show higher overall averages, although the impact often seems to be slightly less than that of maternal education. Educated fathers are associated with greater availability of economic and educational resources at home, which improves learning opportunities (Coleman, 1988). However, some studies (e.g. Cheadle, 2008) suggest that mothers play a more direct role in children's daily educational activities, which could explain their differential impact.

➢ Practical implications:

Encouraging fathers to become more involved in day-to-day educational activities, such as homework support or reading, could maximize their contribution to their children's academic success.

➢ Summary of combined results:

1. Cumulative effect of both parents' education:

The results show that the combined effect of a high level of education from both parents is more powerful than a high level of education from just one parent. This reflects a synergy between parental influences, creating an even more favorable educational environment.

2. Disparities linked to parents' low level of education: Pupils with poorly educated parents show lower results, probably due to a lack of cultural capital and limited educational support at home. These results corroborate research establishing a strong correlation between parental education level and children's academic success: Coleman model (1988): Access to parental human and social capital contributes directly to children's academic performance. Parental investment theory: Educated parents devote more time and resources to their children, which improves their skills and intellectual development (Becker, 1981). Empirical studies (e.g. Haveman and Wolfe, 1995) show that parents' low level of education is a major predictor of poor school performance, often compounded by unfavorable socio-economic conditions.

4.1.3. Practical Implications

- Parent Education Programs: Offer workshops or resources to help parents with little education to become effectively involved in their children's education. For example, parent-child tutoring classes could improve educational outcomes.

- Targeted Support for Pupils: Set up support mechanisms for pupils from less-educated families, such as mentoring programs, tutoring sessions or school bursaries.
- Reducing Structural Inequalities: Disparities linked to parental education highlight the need for policy interventions aimed at reducing the impact of socio-economic inequalities on education.
- Role of Schools: Schools could offer specific training or resources to raise parents' awareness of the role they play in supporting children at school, even with low levels of education.

Table 5. Analysis of inter-subject effects on overall score

Tests for inter-subject effects					
Dependent variable: Overall score					
Source	Sum of type III squares	ddl	Medium square	*F*	Signification
Father's level of education	7.501	5	1.500	0.365	0.872
Mother's level of education	76.267	5	15.253	3.708	0.003
Level_Edu_Fat * Level_Edu_Mat	84.893	15	5.660	1.376	0.164

Figure 4. Analysis of inter-subject effects on overall score

The results of the analyses indicate the following:

1. Significant effect of mother's level of education: With a p-value of 0.003, the mother's level of education exerts a statistically significant influence on pupils' academic performance. This suggests that pupils whose mothers have a higher level of education generally perform better academically. The interaction between the mother's and father's levels of education has no significant effect on pupils' overall marks. This indicates that the effects of these two variables are independent and that maternal education has a dominant impact.
2. Importance of pre-school education: These results are consistent with studies that highlight the crucial role of mothers in children's educational development. Mothers, who are often primarily responsible for day-to-day educational interactions, are in a better position to support children's learning if they themselves have a high level of education. Bronfenbrenner (1979), in his ecological model, emphasizes that direct interactions between parents and children have a strong influence on their development. Educated mothers are generally more likely to provide a stimulating educational environment and instill effective study habits. Davis-Kean (2005) has shown that mothers with a higher level of education place greater value on education and promote behaviors that support their children's success at school.
3. Independent role of paternal education: The absence of any significant interaction between the education levels of the two parents could indicate that the effects of maternal and paternal education are independent, or that the father's role is less directly linked to daily school supervision in certain cultural or family contexts. However, studies on social capital (Coleman, 1988) and on parental roles show that fathers can exert an indirect influence on educational success via economic stability or emotional support.

4.1.4. Practical Implications

- Strengthen mothers' education: These results underline the importance of initiatives aimed at increasing mothers' level of education, in particular via: Adult or continuing education programs. Raising awareness of the impact of their own education on their children's success at school.
- Targeting poorly educated mothers: Pupils whose mothers have a low level of education could benefit specific programs, such as: Free school tutoring. Workshops for mothers, to provide them with practical tools to support their children's schooling.
- Independent strategies for the paternal role: Although the interaction between the two levels of education is not significant, it is important not to underestimate the role of fathers. Campaigns to get fathers more involved in education, whatever their level of education, could also be beneficial.
- Implications for education policy: Schools and educational institutions could work with families to raise awareness among parents, particularly mothers, of the importance of their educational role. Initiatives such as 'parents' schools' or family support platforms can strengthen parental involvement.

Table 6. Analysis of the effect of parent's support on overall grades

		General grades			Tests MANOVA	
		Number	Average	Deviation	*F*	ddl
Why are your parents going to school	Absence	78	13.16	2.37	0.039	6
	Incident	11	13.02	2.14		
	Recover notes	39	15.18	1.86		
	Diseases	21	14.62	1.91		
	Dispute	3	14.33	2.25		
	School accident	5	14.59	2		
	Problems with the teacher	3	14.67	1.69		
	Problem with the director	2	14.98	0.04		
	Keeping up to date	27	13.95	1.75		
	Meeting with teachers	11	15.28	1.95		
Do your parents attend school reunions?	No	102	13.42	2.2	0.981	1
	Yes	98	14.63	2.09		
When I have difficulties with my homework. I can get help and support	No	115	13.64	2.19	0.127	1
	Yes	85	14.52	2.18		

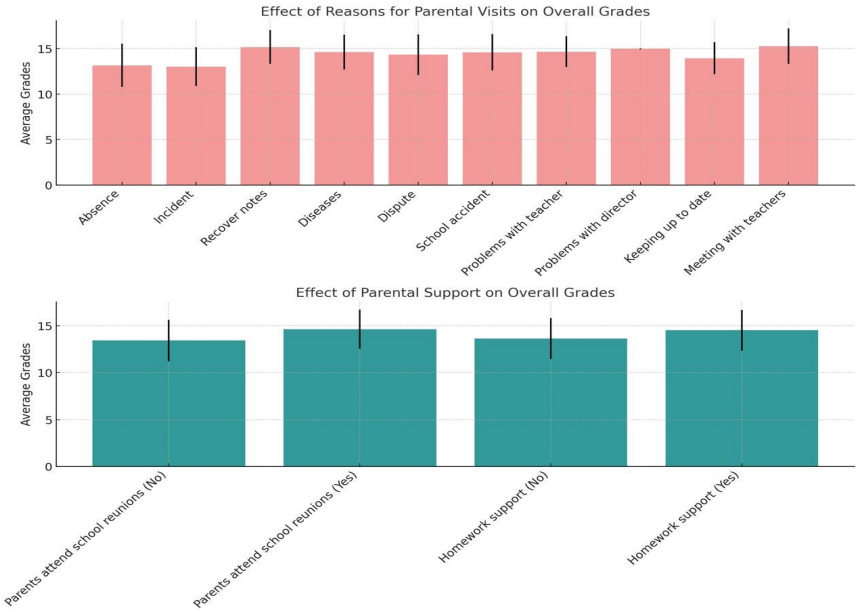

Figure 5. Analysis of the effect of parent's support on overall grades

The analyses reveal several observations concerning the reasons for pupil absence and parental support. These results make it possible to distinguish between significant and non-significant effects of the variables studied:

1. Reason 'Absence': Significant effect between groups ($F = 0.039$).

A significant difference between the groups for the reason for absence indicates that this variable really distinguishes the groups in the sample. This may mean that pupils absent for this reason share particular characteristics or contexts that influence their academic performance or behavior. School absenteeism, particularly when recurrent, is often associated with poorer academic performance, as highlighted by Gottfried (2009) and Kearney (2008). Absences may be linked to socio-economic, family or psychosocial factors influencing academic success. Absences for non-academic reasons (such as family or personal problems) can disrupt the continuity of learning, contributing to gaps in academic achievement.

• Practical Implications: Identify the underlying causes of these absences and propose targeted interventions (e.g. psychosocial support, educational support).

Involve families in strategies to reduce absenteeism through awareness-raising programs on the importance of regular attendance at school.

2. Reasons 'Incident', 'Recovery of grades', 'Illness', etc. No significant effect

The absence of a significant effect for these reasons indicates that these variables do not lead to significant differences between groups of pupils in terms of academic results. Occasional absences or absences for one-off reasons, such as illness or meetings with teachers, generally have a limited impact on academic results, especially if they are rare or justified (Chen & Stevenson, 1995). These absences do not systematically affect the continuity of learning, especially when remedial systems are in place.

• Practical Implications: Although these absences do not have a significant direct impact, schools should continue to monitor their frequency and offer remedial opportunities to avoid an accumulation of negative impact.

Better communication with parents to minimize avoidable absences (such as absences for non-emergency reasons) could also be beneficial.

3. Parental attendance at school meetings ($F = 0.981$): No significant effect

Whether or not parents attended school meetings did not appear to have a direct influence on pupils' academic results. Although parental participation is often associated with better school performance (Epstein, 1995), this correlation depends on the quality and not simply the frequency of interactions between parents and teachers. Parents may be absent from meetings but heavily involved at home, which could compensate for their absence at school.

• Practical Implications: Encourage diversified forms of participation (such as individual interviews, digital platforms) to involve busy or geographically distant parents.

Place more emphasis on the quality of exchanges between parents and teachers rather than their frequency.

4. Homework support ($F = 0.127$): No significant effect

The absence of a significant difference between groups with and without parental support for homework suggests that this support does not directly influence school results. Parental support for homework is most effective when it is structured and encourages the child's autonomy (Patall, Cooper and Robinson, 2008). Excessive or ill-adapted parental support can even be counter-productive, by increasing the child's stress or dependence. The quality of support, and not simply its presence, is the key factor.

• Practical implications: Offer workshops to train parents in effective strategies for helping their children.

Encourage pupils to develop autonomy skills and actively seek help from teachers or peers.

4.2. The Effects of Family Factors on School Behavior

4.2.1. Effect of Parents' Level of Education

1. Influence of mother's level of education: The mother's level of education had a significant influence on several parameters:

➢ Acceptance of school rules: Pupils with a university-educated mother had higher average scores (2.80) than those with an illiterate or less-educated mother.

➢ General mark and PE (physical and sports education): A more educated mother is associated with higher general marks (p=0.004, η^2=0.161) and better performance in PE (p=0.05, η^2=0.157).

➢ Mothers' educational role: Several studies show that mothers' level of education directly influences children's school results, as they are often the primary educators and role models (Davis-Kean, 2005). An educated mother is more likely to encourage school engagement, value learning, and help her children navigate institutional expectations (Hill and Tyson, 2009). The effect observed in PE could be linked to an increased awareness among educated mothers of the importance of physical activities in children's overall development.

Table 7. Summary of the effects of family factors on school behavior

	School Behavior and Performance								
Family factors	General Grade	Physical Education Grade	Language Difficulties	Health Difficulties	Memory Difficulties	Impatient	Group Work	Access to Housing Facilities	Drug Use
Father function	ns	ns	ns	ns	ns	ns	ns	S	ns
Mother function	ns	ns	ns	ns	ns	ns	ns	S	ns
Num's brothers	ns	ns	ns	ns	ns	ns	ns	ns	ns
Num sisters	ns	ns	ns	S (0.20) Eta0.102	ns	ns	ns	S (0.05) Eta0.820	ns
Sibling rank	ns	ns	ns	ns	ns	ns	ns	ns	ns
Mother education	0.003	0.005	ns	ns	ns	ns	I	0.011	I
father education	ns	ns	ns	ns	ns	ns	I	ns	I
parents go to school?	0.018	ns	ns	ns		ns	ns	ns	0.039
Parents attend school meetings	0.000 Eta0.218	0.023 Eta0.054	ns	ns	0.032	ns	ns	0.010	ns
Homework helps and support	0.000 Et 0.161	0.002 Et 0.093	ns	ns	0.003 Eta0.087	ns	ns	0.000 Eta 0.185	ns

2. Mother-father interaction on certain behaviors

Interactions between mother's and father's level of education influence specific behaviors such as: Group work: (p=0.007, η^2=0.148). Drug use: (p=0.013, η^2=0.136). These interactions suggest that the combined educational role of both parents may have an indirect influence on social skills (such as collaboration) and risk behaviors. Studies of parenting practices (Baumrind, 1991) show that more educated parents promote a structuring environment, which reduces the likelihood of deviant behavior.

3. No effect of the father's level of education alone

Unlike the mother, the father's level of education shows no significant effect. This may reflect gendered roles in child rearing, with mothers assuming more direct educational responsibilities, as noted by Cheung and Andersen (2003).

4. Effect of siblings

1) Influence of number of sisters on acceptance of school laws: Pupils with two sisters obtained higher scores (2.14) on the 'acceptance of school laws' parameter than those with three sisters (1.40, p=0.028). Family resource theory (Downey, 1995): This theory states that the more children a family has, the fewer resources each child receives (time, attention, academic support). Having more sisters could dilute parental attention, with a negative effect on school socialization and acceptance of rules. Interactions between brothers and sisters also influence attitudes and behavior. An environment with fewer sisters could encourage a more structured and disciplined family dynamic.

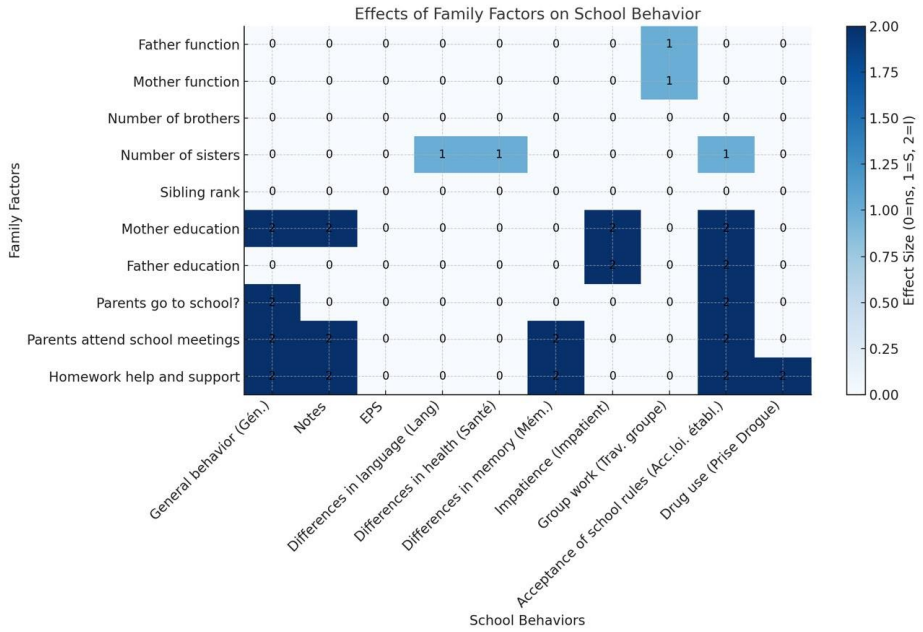

Figure 6. Results for the variation in "I accept the laws established by the school and fathers' function

2) Presence of brothers: A large proportion (87 subjects) had two brothers, but the effect of this variable on the parameters measured was not specified. This could reflect a difference in family dynamics or in the distribution of educational roles.

- Practical implications: Strengthen mothers' education

• Suggested actions: Set up educational programs for mothers, particularly those with a low level of education. Raise families' awareness of the crucial role played by mothers in supporting their children's education. Target large families for specific support.

• Proposals: Large families could benefit from additional resources, such as homework help or parenting workshops to help parents manage the educational challenges associated with having so many children.

Promote balanced father-mother education

• Recommendations: Although the effect of the father's level of education is less pronounced, it is important to raise fathers' awareness of their educational role. Community campaigns or training could encourage a more balanced sharing of educational responsibilities.

Include siblings in educational strategies

• Possible interventions: Develop collaborative activities to strengthen ties between brothers and sisters and promote positive family dynamics. Involve older siblings in mentoring roles for their younger siblings.

4.2.2. Condition of Students' Homes on School Grades

These results of the tests for between-subjects effects show that few of the independent variables or interactions between them have a significant impact on the dependent variable, pupils' general marks. Here is an analysis of the results:

➢ House Noise: No significant effect on general marks. This may indicate that noise at home is not a determining factor for academic performance in this study population. It may also reflect students' resilience in the face of a disturbing noise environment.

➢ Parents' Divorce: No significant effect. Although some studies show that parental divorce can have a negative impact on educational achievement (Amato, 2001), its impact can vary depending on family support, post-divorce adjustments and the age of the children at the time of separation.

➢ Father's death and mother's death: No significant effect. This may be linked to the low occurrence of these events in the sample studied, or to resilience mechanisms developed by the pupils affected.

➢ Housing at Grandparents: No significant effect. Living with grandparents can sometimes provide emotional and educational support for children, but this effect seems irrelevant here in explaining the differences in overall scores.

• Significant Interactions

- House noise * father's death: Significant interaction (F=7.467, p=0.007 F=7.467, p=0.007). This suggests that the combined effect of household noise and father's death influences overall scores. A noisy environment could amplify the emotional or practical impacts associated with the loss of a parent, creating additional obstacles to academic success. Children living in a quiet environment could cope better with this loss thanks to conditions conducive to concentration and emotional recovery.

• Practical Implications

➢ Support students facing complex situations: Pupils who have lost a parent, particularly the father, in a noisy environment may benefit from specific support programs, including psychological support and Conditions conducive to study, such as quiet areas at school. This is in line with recommendations in the literature on the importance of providing socio-emotional support for children after traumatic events (Dowdney, 2000).

➢ Home environments: Although domestic noise does not have a significant direct effect on general grades, its interaction with variables such as the death of a parent suggests that it may act as an aggravating factor. This highlights the importance of raise families' awareness of the need to create environments conducive to study and encourage schools to provide quiet spaces for students who cannot study at home.

➢ Resilience and the family network: The results indicate a certain resilience among students in the face of events such as parental divorce or the death of a parent. However, this resilience can be strengthened by emotional skills workshops at school and involving close family members, such as grandparents, in educational and emotional support.

➢ Individualizing interventions: The results show that the complex interactions between variables (e.g. noise and death) require a personalized approach to support pupils. School programs must include socio-familial assessments to adapt resources.

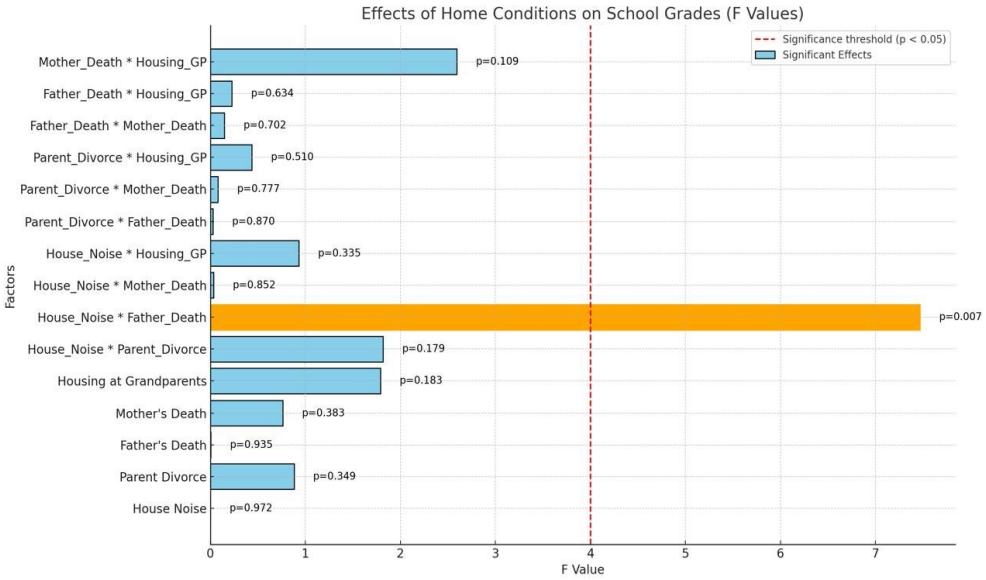

Figure 7. Analysis of the effects of students' home conditions on school

Table 8. Analysis of the effects of students' home conditions on school grades

Tests for between-subjects' effects				
Dependent variable: General grades				
Source	ddl	Medium square	*F*	Signification
HOUSE NOISE	1	0.006	0.001	0.972
PARENT DIVORCE	1	4.201	0.882	0.349
FATHER'S DEATH	1	0.032	0.007	0.935
MATHER'S DEATH	1	3.644	.765	0.383
HOUSING AT GRANDPARENTS	1	8.533	1.791	0.183
HOUSE_NOI * PAREN_DIVOR	1	8.665	1.819	0.179
HOUSE_NOI * FATH_DEATH	1	35.580	7.467	0.007
HOUSE_NOI* MOTH_DEATH	1	0.167	0.035	0.852
HOUSR_NOI * HOUSING_GP	1	4.444	0.933	0.335
PAREN_DIVOR * FATH_DEATH	1	0.129	0.027	0.870
PAREN_DIVOR * MATH_DEATH	1	0.384	0.081	0.777
PAREN_DIVOR * HOISING_GP	1	2.079	0.436	0.510
FATH_DEATH * MOTH_DEATH	1	0.699	0.147	0.702
FATH_DEATH * HOISING_GP	1	1.081	0.227	0.634
MOTH_DEATH * HOISING_GP	1	12.364	2.595	0.109

5. DISCUSSION

Discussions of the results suggest that our original proposition has been confirmed. When we look at the relationship between the two variables, we find that school behavior (of students)/ grades is proportional to family factors. In other words, the results correspond to our expectations. We thought, like P. Aime (2010), that family upbringing influences students' behavior in the school environment, and like Ryan and Adams (1995), that learners' academic success would improve as parents converge on high levels of constructive interaction.

To relate the results to previous studies such as Kakpo (2011) and Glasman (2004), the findings can be reinforced as follows: Parental Involvement and Educational Success: The results affirm Kakpo's (2011) findings that the quality of parent-child and parent-school interactions is more crucial than the quantity of parental involvement. Kakpo highlighted that simple participation in school-related activities, such as attending parent-teacher meetings, is insufficient unless accompanied by meaningful engagement that fosters a supportive learning environment. This aligns with the current study's emphasis on focusing on the quality of these interactions and targeting interventions for vulnerable pupils.

Mother's Level of Education: The findings echo Glasman's (2004) conclusions on the profound influence of a mother's educational attainment on children's academic attitudes and performance.

Glasman argued that mothers with higher education levels are more likely to create stimulating home environments and adopt practices that encourage academic success. Similarly, the current study underscores need for tailored interventions to address disparities in children's educational opportunities rooted in parental education levels.

Siblings and Family Dynamics: Both studies recognize the complex interplay of siblings in educational outcomes. Glasman (2004) discussed how the presence and roles of siblings could either foster competition and motivation or dilute parental attention, depending on the family structure and socio-economic context. The present findings extend this by recommending inclusive approaches that account for siblings' roles in shaping the school and family environment.

Environmental and Family Factors: The study's emphasis on the interplay of environmental and family factors mirrors Kakpo's (2011) observations on the cumulative impact of contextual variables. Both studies stress that isolated interventions may have limited effects, but integrated approaches -combining improved learning environments, socio-emotional support, and family engagement- can yield more substantial results. By aligning the current results with the insights of Kakpo (2011) and Glasman (2004), it becomes evident that holistic, context-sensitive interventions are critical for fostering educational success and student well-being.

6. CONCLUSION

Parental investment in children's schooling is vital for overcoming academic challenges. The absence of such involvement contributes to early school withdrawal and diminished academic performance [8]. The study underscores the importance of targeted educational policies that promote parental engagement to enhance student success in Moroccan public schools [12, 15, 30]. Our research has highlighted the importance of mothers' level of education as a determining factor in students' academic performance in Moroccan public schools. Other family factors, such as parents' professional role, attendance at school meetings, number of siblings and specific reasons for absence, showed a significant impact on school results. Studies by Kakpo (2009), Glasman and Besson (2004), Thin (1998) and Lahire8 (1995) have concluded that parents' level of education always influences their children's academic success.

For example, the European Union's Survey on Income and Living Conditions (EU-SILC, 2005) indicates that the majority of young people aged 25-34 whose parents have a low level of education have themselves achieved a below-average level of schooling. These findings could be useful in guiding educational policies and family support to improve the academic performance of students in this specific context. Further research is essential to identify effective intervention strategies to improve the education of Moroccan students and overcome these potential barriers to learning.

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